Eshan College of Engineering

Approved by AICTE, New Delhi and Affiliated to AKTU (Formerly UPTU) & BTE, Lucknow

Detailed Report

Workshop on- "Applications of MATLAB in Solving Engineering Problems"

(Two-days)

Subject Area- Research Methodology

Organized by- Department of Electrical Engineering

The heart of MATLAB is the MATLAB language, a matrix-based language allowing the most natural expression of computational mathematics. It is a programming platform designed specifically for engineers and scientists to analyse and design systems and products that transform our world. Our efficient Director Dr. Ghanshyam Srivastava and faculty comprehended that it can be used as a tool for simulating various electrical networks but the recent developments in MATLAB make it a very competitive tool for Artificial Intelligence, Robotics, Image processing, Wireless communication, Machine learning, Data analytics etc.

MATLAB is designed for the way you think and the work you do, so learning is accessible whether you are a novice or an expert. The faculty organized a two-day workshop on **"Applications of MATLAB in Solving Engineering Problems (Research Methodology)"**from 18/04/2018 to 19/04/2018 in which 33 students enrolled. After inaugural speech by our esteemed Director, Shri Rajeev Shankar, AP, EE presided over the session of day one. Highlights of Day-1 of this workshop included the following elements-

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- Starting with basic algebra, students learned how MATLAB can be used to solve a wide range of engineering problems.
- Examples were taken from concepts presented in early chemistry, physics, and first- and second-year engineering classes.
- Statistics and matrix algebra, brief background information was used to support student success.
- As they worked through hands-on examples and exercises, they learned to apply a consistent problem-solving methodology to help them reach a solution.

On the second day, students were made aware of numeric techniques, computer simulations and data structure by Ms. Lalita Singh, AP, EE. Highlighting how to apply a top-down modular approach to design and debug sequential MATLAB programs, she concentrated on the following aspects-

- To apply and design different algorithms using MATLAB.
- To upload data from different sources, such as files, databases, or the internet, into MATLAB. At the same time, how to analyse them.
- MATLAB has a very large library of mathematical functions. Thus, how to perform the computation of linear algebra and matrices as a mathematical product.
- To simulate data models, prototypes, and products to design or calculate with MATLAB.
- To optimize them in order to use it effectively with other programs and design various self-specific interfaces.

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The students became familiar with this concept and took notes for their betterment. The successful workshop concluded with a vote of thanks by our respected Director and acknowledging the speakers for their credible efforts.

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